

**Third Semester FYUGP Degree (Reg) Examination November
2025**

**KU3DSCBCH203 - FUNDAMENTALS OF BIOCHEMISTRY
III**

2024 Admission onwards

Time : 2 hours

Maximum Marks : 70

Section A

Answer any 6 questions. Each carry 3 marks.

1. Define homogenisation.
2. Name the principle technique used to separate volatile substances in Gas Chromatography.
3. Explain rate equation
4. List examples of irreversible enzyme inhibitors.
5. Name the two types of allosteric effectors.
6. Define therapeutic enzymes? Give 2 examples
7. Define nomenclature of enzymes? Give example
8. Differentiate between anabolic and catabolic roles of enzymes with examples

Section B

Answer any 4 questions. Each carry 6 marks.

9. Describe the relationship between K_m and enzyme affinity.
10. Make a research proposal to examine how a key metabolic enzyme's K_m and V_{max} affect metabolic reaction.
11. Summarize the concept of cooperativity in allosteric enzymes.
12. Compare the role of Mg^{2+} with Zn^{2+} in enzyme catalysis.
13. Illustrate how therapeutic enzymes are used in the management of myocardial infarction.
14. Design a therapeutic enzyme strategy for treating a genetic enzyme deficiency disorder.

Section C

Answer any 2 questions. Each carry 14 marks.

15. Apply the First and Second Laws of Thermodynamics to explain energy flow in a biological process .
16. Illustrate thioesters with an example.
17. Judge the effectiveness of centrifugation versus homogenization as a first step in sample preparation for biochemical analysis.